NOVEMBER 15.

The President, DR. JOS. LEIDY, in the chair.

Twenty-five persons present.

Papers under the following titles were presented for publication:—

"Note on Achines lorentzi Weyenburgh." By David S. Jordan.

Description of two new species of Fishes from South America." By David S. Jordan.

Geological Results of the Boring of an Artesian well at Atlantic City, N. J.—Mr. Lewis Woolman stated that there was commenced in the summer of 1886 at Atlantic City, N. J. an artesian well, the drilling of which has been since continued with some intermission until, at the present time, a depth of 1121 feet has been reached. During a recent cessation in the work caused by delay in the receipt of pipe for tubing the well he had been permitted through the courtesy of the gentlemen interested in the enterprise to turn over and examine the sands, clays and marls accumulated in the dump heap and had found many fossil representatives of life forms, including a bone—the articulating end of a femur or humerus of an animal belonging to the Crocodilia,—presented by Dr. T. K. Reed, and a few shells and fish teeth presented by Jas. H. Moore, engineer in charge. There have been obtained from the well 52 species in all, 42 being mollusks. Many of the smaller shells were entire and quite perfect but most of the larger ones were fragmentary, having been broken in pieces by the drill. James H. Moore also kindly furnished a minute description of the thickness and character of all the sands passed through, by a careful examination of which and a grouping of the smaller seams with the larger ones that give character to formations, the speaker had constructed the following section:—

Sands.	First	285 ft.	Superficial Sands, Gravels and Clays. Wood found at the base.
Clays.	285 ft. to 416 ft. =	131 ft.	Black Clays and Sands.
	416 ft. to 435 ft. =	19 ft.	Bluish Clay.
Clays and marls with fossils	435 ft. to 670 ft. =	235 ft.	Greenish Clays and Marls with much comminuted shell; some shark teeth and many seams of brittle marly clay of gray color.
Sands.	670 ft. to 691 ft. =	21 ft.	Blackish and brownish sands.

Clays with fossils	691 ft. to 722 ft. =	31 ft.	Chocolate Clay.
	722 ft. to 806 ft. =	84 ft.	Fossiliferous Clays and sands; shells and sharks teeth.
Sands.	806 ft. to 866 ft. =	60 ft.	Non-fossiliferous sands, alternating blackish, whitish, and reddish brownin color.
Clays.	866 ft. to 939 ft. =	73 ft.	Dark Marls and Clays.
Marls.	939 ft. to 999 ft. =	60 ft.	Green marls (various shades) and black marls.
Sands.	999 ft. to 1119 ft. =	120 ft.	Sands mostly yellowish green and full of barnacles.
	1119 ft. to 1121 ft. =	2 ft.	White Sands. *Water* flowing to surface.
	Total 1121 ft.		

Prof Angelo Heilprin has kindly and very carefully examined and identified all the specimens of fossils. The speaker has placed to the right of each in the following list, the range along the Atlantic Seaboard where out-crops containing the same fossils have previously been found—the names of the formation being those established by Prof. Heilprin in his Tertiary Geology, in which the formation in in the state of Maryland is divided into an older and a newer group:—

Miocene	Marylandian,	Older Maryland group.
	=	Lower Atlantic Miocene.
	Virginian,	Newer Maryland group and deposits of Virginia.
	=	Middle Atlantic Miocene.
	Carolinian,	Deposits of North and South Carolina.
	=	Upper Atlantic Miocene.

Anomia (probably *ephippium*).	N. C. S. C.
Arca centenaria,	N. J. Newer Md., Va., & S. C.
Arca subrostrata,	Older Md.
Arca (*idonea*?)	Newer Md., Va., N. C.
Arca (*lienosa*?)	N. C. S. C.
Artemis (*acetabulum*?)	Newer & Older Md., Va., N. C.
Astarte compsonema,	N. J.
Astarte obruta,	Newer Md.
Astarte perplana,	Newer Md.
Astarte Thomasii,	N. J.
Cardita granulata,	Newer Md., Va., N. C., S. C.
Cardita arata,	N. J. Newer Md., Va., N.C., S.C.
Crassatella melina,	N. J. Older Md., Va., N. C.
Corbula idonea,	Newer and Older Md.
Corbula elevata,	N. J. Older Md.
Cardium (probably *laqueatun*),	N. J. Va.

Cytherea,	
Discina lugubris,	N. J.
Donax (*variabilis*,?)	
Fulgur,	
Lucina trisulcata,	S. C.
Mactra lateralis,	N. J.
Mactra ponderosa,	Newer Md.
Mytiloconcha incurva,	N. J. Older Md.
Mytilus incrassatus,	S. C.
Mysia,	
Natica catenoides,	N. J.
Nassa trivittata,	N. J. Newer Md., Va., N. C. S. C.
Nucula obliqua,	N. J. Va., N. C.
Ostrea,	
Pecten Madisonius,	N. J. Newer Md., Va., N. C.
Pecten Humphreysii,	N. J. Older Md.
Pecten vicenarius	
Perna maxillata,	N. J. Older Md., Va.
Tellina subreflexa,	
Tellina declivis.	
Turritella Cumberlandia,	N. J.
Turritella æquistriata,	N. J.
Turritella plebeia,	Newer Md.
Turritella (sp. not determinable),	
Turbinella Woodi,	N. J.
Venus.	
Barnacles,	Crustacea.
Femur or humerus,	Crocodilia.
Tooth,	Gavial.
Tooth *Lamna compressa*,	Shark.
Tooth *Odontaspis*,	Shark.
Tooth, species not determinable,	Shark.
Teeth *Myliobates*,	Fish.
Spine of *Echinus*,	
Dendrophyllia,	Coral,
Polyzoan,	

James H. Moore had noted the depth from which the specimens furnished by him had been taken; with this information and an examination of the sands of the dump and their contained fossils, it may be safely concluded that of the above:—

Turritella plebeia came from a depth of about 450 ft.
Corbula elevata came from a depth of about 730 ft.
Perna maxillata came from a depth of about 800 ft.

The paleontological evidence indicates that the portion of the section between 400 and 700 feet belongs to the Middle Miocene and all below that to the Lower Miocene.

About 15 of the above species, it is believed, have never before been found in New Jersey. These are from the upper layers (Middle Miocene) which no doubt exist further back from the shore, say

about 30 miles N. W., where they are buried beneath 50 to 100 feet of more recent Tertiary sands and gravels.

Most of the other species (Lower Miocene) that have previously been noticed in the state occur at Shiloh, near Bridgeton, in Cumberland County, while others are found in Salem County. The lower strata from which they were obtained also probably exists in a direct N. W. line 33 to 35 miles from Atlantic City; but these are likewise covered by more recent Tertiary strata.

NOVEMBER 22.

REV. HENRY C. MCCOOK, D. D., Vice-President, in the chair.

Twenty-eight persons present.

Note on Cyrtophora bifurca and her cocoons, a New Orb-weaving Spider.—Dr Henry C. McCook remarked that during a temporary stay in Florida, April 1886, he found nested upon the porch of Dr. Wittfeld's place, Fairyland, Merrit's Island, on the Indian River a little way below Rockledge, a spider which appears to be new to science. Its snare resembles that of *Cyrtophora caudata*, Hentz. It also resembles that spider in the manner of hanging its cocoon string in the vertical axis of its orb just above the hub. The character of the cocoon, however, differs entirely from that of *caudata*. It is in the shape of a somewhat irregular octogon, and is of a light green color. The speaker had found as many as twelve cocoons in one string overlapping one another in the manner which he had frequently observed with the cocoons of the Labyrinth spider, (*Epeira labyrinthea* Hentz) and which may also be seen at times with the cocoons of *caudata*, although for the most part, the latter are arranged at intervals along the string.

The cocoon strings collected varied in the number of cocoons attached thereto,—probably according to the period of advancement in the process of ovipositing on the part of the mother. Of the specimens collected one string contained 14, another 12, and another 10 cocoons. They are bound together along one side by continuous series of thick white threads which extend from the top to the bottom of the string. Each cocoon consists of two parts which have evidently been fastened together by a selvage. These parts present the appearance of two dishes placed together edge to edge. They are woven of a soft but rather tough texture. A very slight tuft of flossy white silk is found inside, and within this the eggs are deposited. In one cocoon of a string of thirteen, twenty five minute dead spiders were counted which had passed their first moult. In another cocoon taken from a string of five only, there were twenty six. The number varies a good deal, however. The cocooning period appears to extend into May; at least Dr. McCook had received from Miss Anna Wittfield, as late as the middle of June, a string in which were some cocoons empty, one with spiderlings passed the